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George A Loud
BACON & THOMAS
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 23314

EXAMINER
LAFORGIA, CHRISTIAN A

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/542,009	KATO, MAKOTO
	Examiner	Art Unit	
	Christian LaForgia	2439	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 March 2006</u>.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-29</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-29</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>14 March 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>10/6/05</u>.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-29 have been presented for examination.

Priority

2.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d).

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 13 July 2005 is in compliance

with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been

considered by the examiner.

Specification

4.   The disclosure is objected to because the claims fail to commence on a separate sheet of

paper. 37 C.F.R. § 1.52(b)(3) requires that the claims must commence on a separate sheet or

electronic page. See MPEP § 608.01. Appropriate correction is required.

5.   The abstract of the disclosure does not commence on a separate sheet in accordance with

37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a

separate sheet, apart from any other text.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

7.   Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. The claims are generally narrative and indefinite, failing to conform with current

U.S. practice. They appear to be a literal translation into English from a foreign document.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 1, 3-11, and 13-29 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as

being anticipated by U.S. Patent No. 7,146,009 B2 to Andivahis et al., hereinafter Andivahis.

10.   As per claims 1 and 11, Andivahis teaches a data-transmission system that sends

transmission data, which has been encrypted by us ing at least one conversion constant from

among a first conversion constant second conversion constant and third conversion constant,

from an apparatus on the sending side to an apparatus on the receiving side, wherein said

apparatus on the sending side comprises:

        a conversion-constant selection means of selecting said first conversion constant, said

second conversion constant and said third conversion constant; an encryption means of using

said second conversion constant, or said second conversion constant and said third conversion

constant to encrypt said transmission data to a first substitute value, and using said first

conversion constant, or said first conversion constant and said third conversion constant to

encrypt said transmission data to a second substitute value; a first-signal-generation means of

generating a first signal that contains said first substitute value and said first conversion constant;

a memory means of storing a pattern-conversion constant that corresponds to said third

conversion constant; a second-signal-generation means of generating a second signal that

contains said second substitute value, said second conversion constant and said pattern-

conversion constant; and a transmission means of sending said first signal to said apparatus on

the receiving side and said second signal to a relay apparatus (Figures 2 [block 210], 3 [block

310], 4 [block 410], 5A, column 4, line 21 to column 6, line 16, column 7, line 31 to column 8,

line 29, column 9, lines 13-67);

   said relay apparatus comprises: a memory means of storing a third conversion constant

that corresponds to said pattern-conversion constant; a signal-generation unit that receives said

second signal, and converts said pattern-conversion constant contained in said second signal to

said third conversion constant to generate a second signal; and a transmission means of sending

said second signal to said apparatus on the receiving side (Figures 2 [block 240], 3 [block 340], 4

[block 440], column 5, lines 13-30, column 8, line 6-14, column 9, lines 28-44); and

   said apparatus on the receiving side comprises: a reading means of receiving said first

signal from said apparatus on the sending side and said second signal from said relay apparatus,

and reading said first substitute value and said first conversion constant from said first signal,

and reading said second substitute value, said second conversion constant and said third

conversion constant from said second signal; a decoding means of using said conversion

constants that were used in encrypting said first substitute value and said second substitute value

to decode said first substitute value and said second substitute value to first decoded data and

second decoded data, respectively; and an authentication means of authenticating said first signal

and said second signal from said first decoded data and said second decoded data (Figures 2

[block 220], 3 [block 320], 4 [block 420], 5B, 6B, 7B, column 6, line 17 to column 3, line 20,

column 8, line 31 to column 9, line 4, column 10, line 1-47).

11.   As per claims 3 and 13, Andivahis teaches a data-transmission system that sends

transmission data, which has been encrypted using at least one conversion constant from among

a first conversion constant, second conversion constant and third conversion constant, from an

apparatus on the sending side to an apparatus on the receiving side, wherein said apparatus on

the sending side comprises:

        a conversion-constant-selection means of selecting said first conversion constant, said

second conversion constant and said third conversion constant; an encryption means of using

said second conversion constant, or said second conversion constant and said third conversion

constant to encrypt said transmission data to a first substitute value, and using said first

conversion constant, or said first conversion constant and said third conversion constant to

encrypt said transmission data to a second substitute value; a first-signal-generation means of

generating a first signal that contains said first substitute value and said first conversion constant;

a memory means of storing a pattern-conversion constant that corresponds to said third

conversion constant; a second-signal-generation means of generating a second signal that

contains said second substitute value, said second conversion constant and said pattern-

conversion constant; and a transmission means of sending said first signal and said second signal

to said apparatus on the receiving side (Figures 2 [block 210], 3 [block 310], 4 [block 410], 5A,

column 4, line 21 to column 6, line 16, column 7, line 31 to column 8, line 29, column 9, lines

13-67); and

said apparatus on the receiving side comprises:

a reading means of receiving said first signal and said second signal, and reading said

first substitute value and said first conversion constant from said first signal, and reading said

second substitute value, said second conversion constant and said pattern-conversion constant

from said second signal; a memory means of storing a third conversion constant that corresponds

to said pattern-conversion constant; a reading means of reading said third conversion constant

from said read pattern-conversion constant; a decoding means of using the conversion constants

that were used to encrypt said first substitute value and said second substitute value to decode

said first substitute value and said second substitute value to first decoded data and second

decoded data, respectively; and an authentication means of authenticating said first signal and

said second signal from said first decoded data and second decoded data (Figures 2 [block 220],

3 [block 320], 4 [block 420], 5B, 6B, 7B, column 6, line 17 to column 3, line 20, column 8, line

31 to column 9, line 4, column 10, line 1-47).

12.   Regarding claims 4, 14, and 20, Andivahis teaches the data-transmission system of claim

1 or claim 3 wherein said encryption means uses said second conversion constant and third

conversion constant to encrypt said transmission data to a first substitute value, and uses said

first conversion constant and said third conversion constant to encrypt said transmission data to a

second substitute value (Figures 5A [steps 512, 522], 6A [steps 612, 622], 7A [block 712],

column 5, lines 13-30, column 5, line 60 to column 6, line 11, column 7, lines 64-67, column 8,

lines 15-24, column 9, lines 45-63).

13.   Regarding claims 5, 15, and 21, Andivahis teaches the data-transmission system of claim 1 or claim 3 wherein said encryption means uses said second conversion to encrypt said transmission data to a first substitute value, and uses said first conversion constant and said third conversion constant to encrypt said transmission data to a second substitute value (Figures 5A [steps 512, 522], 6A [steps 612, 622], 7A [block 712], column 5, lines 13-30, column 5, line 60 to column 6, line 11, column 7, lines 64-67, column 8, lines 15-24, column 9, lines 45-63).

14.   Regarding claims 6, 16, and 22, Andivahis teaches the data-transmission system of claim 1 or claim 3 wherein said encryption means uses said second conversion constant and third conversion constant to encrypt said transmission data to a first substitute value, and uses said first conversion constant to encrypt said transmission data to a second substitute value (Figures 5A [steps 512, 522], 6A [steps 612, 622], 7A [block 712], column 5, lines 13-30, column 5, line 60 to column 6, line 11, column 7, lines 64-67, column 8, lines 15-24, column 9, lines 45-63).

15.   Regarding claims 7, 17, and 28, Andivahis teaches the data-transmission system of any one of the claims 1 to 3 wherein said apparatus on the receiving side further comprises a drive-signal-transmission means of sending a drive signal for driving an external-drive apparatus based on said first decoded data and second decoded data (column 12, lines 6-49).

16.   Regarding claims 8, 18, and 29, Andivahis teaches the data-transmission system of any

one of the claims 1 to 3 wherein said authentication means performs said authentication when

said first decoded data and said second decoded data match (Figures 5B [step 566], 6B [step

666], 7B [step 766], column 7, lines 7-15, column 9, lines 1-4, column 10, lines 39-48).

17.   Regarding claim 9, Andivahis teaches the data-transmission system of claim 1 or claim 2

wherein said apparatus on the sending side, said relay apparatus and said apparatus on the

receiving side are connected to a communications network that includes the Internet (column 1,

lines 41-50).

18.   Regarding claim 10, Andivahis teaches the data-transmission system of claim 3 wherein

said apparatus on the sending side and said apparatus on the receiving side send or receive

signals by an infrared signal method, wireless signal method, optical communication method or

wired communication method (column 1, lines 41-43, column 1, liens 51-62).

19.   As per claims 19 and 23, Andivahis teaches an apparatus that sends data that has been

encrypted using at least one conversion constant from among a first conversion constant, second

conversion constant and third conversion constant comprising: a memory unit that stores pattern-

conversion constants that corresponds to said conversion constants; a control unit, which

performs a conversion-constant-selection process of selecting said first conversion constant, said

second conversion constant and said third conversion constant, an encryption process of using

said second conversion constant, or said second conversion constant and said third conversion

constant to encrypt said transmission data to a first substitute value, and uses said first

conversion constant, or said first conversion constant and said third conversion constant to

encrypt said transmission data to a second substitute value, a first-signal-generation process of

generating a first signal that contains said first substitute value and said first conversion constant,

a second-signal-generation process of generating a second signal that contains said second

substitute value, said second conversion constant and said pattern-conversion constant that

corresponds to said third conversion constant, and a transmission process of sending the first

signal and second signal; and a transmission unit that sends said first signal and said second

signal to the outside (Figures 2 [block 210], 3 [block 310], 4 [block 410], 5A, column 4, line 21

to column 6, line 16, column 7, line 31 to column 8, line 29, column 9, lines 13-67).

20.   As per claim 24, Andivahis teaches an apparatus that transfers a signal that contains

pattern-conversion constants corresponding to the conversion constants that are used in

encrypting the transmission data, and comprising:

        a memory unit that stores pattern-conversion constants that corresponds to said

conversion constants; a transmission/reception unit that sends and receives said signal; and a

control unit that performs a signal-generation process of converting said pattern-conversion

constants contained in said received signal to said conversion constants to convert said signal,

and a process of transferring said converted signal (Figures 2 [block 240], 3 [block 340], 4 [block

440], column 5, lines 13-30, column 8, line 6-14, column 9, lines 28-44).

21.   As per claims 25-27, Andivahis teaches an apparatus that receives a first signal and

second signal that contain transmission data that was encrypted using at least one conversion

constant from among a first conversion constant, second conversion constant and third conversion constant, and decodes the transmission data and comprises:

a receiving unit that receives said first signal and said second signal, wherein said first signal contains a first substitute value, which is said transmission data that has been encrypted using said second conversion constant, or said second conversion constant and said third conversion constant, and said first conversion constant, and said second signal contains, a second substitute value, which is said transmission data that has been encrypted using said first conversion constant, or said first conversion constant and said third conversion constant, said second conversion constant and said third conversion constant; and a control unit that performs a process of reading said first substitute value and said first conversion constant from said first signal, and reading said second substitute value, said second conversion constant and said third conversion constant from said second signal; a decoding process of using the conversion constants that were used for encrypting said first substitute value and said second substitute value to decode said first substitute value and said second substitute value to first decoded data and second decoded data, respectively; and an authentication process of authenticating said first signal and said second signal from said first decoded data and said second decoded data (Figures 2 [block 220], 3 [block 320], 4 [block 420], 5B, 6B, 7B, column 6, line 17 to column 3, line 20, column 8, line 31 to column 9, line 4, column 10, line 1-47).

Claim Rejections - 35 USC § 103

22.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

23.   Claims 2, 7-9, 12, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Andivahis in view of U.S. Patent Application Publication No. 2003/0074413 A1 to Nielsen

et al., hereinafter Nielsen.

24.   As per claims 2 and 12, Andivahis teaches data-transmission system that sends

transmission data, which has been encrypted by two conversion constants from among a first

conversion constant, second conversion constant, third conversion constant, and fourth

conversion constant, from an apparatus on the sending side to an apparatus on the receiving side,

wherein said apparatus on the sending side comprises:

        a conversion-constant-selection means of selecting said first conversion constant, said

second conversion constant, said third conversion constant and said fourth conversion constant;

an encryption means of using said second conversion constant and said fourth conversion

constant to encrypt said transmission data to a first substitute value, and using said first

conversion constant and said third conversion constant to encrypt said transmission data to a

second substitute value; a memory means of storing pattern-conversion constants that correspond

to said third conversion constant and said fourth conversion constant; a first-signal-generation

means of generating a first signal that contains pattern-conversion constants that correspond to

said first substitute value, said first conversion constant, and said third conversion constant or

said fourth conversion constant; a second-signal-generation means of generating a second signal

that contains pattern-conversion constants that correspond to said second substitute value, said

second conversion constant, and said third conversion constant or said fourth conversion

constant that is not contained in said first signal; and a transmission means of sending said first

signal to a first relay apparatus and sending said second signal to a relay apparatus (Figures 2

[block 210], 3 [block 310], 4 [block 410], 5A, column 4, line 21 to column 6, line 16, column 7,

line 31 to column 8, line 29, column 9, lines 13-67);

said first relay apparatus comprises: a memory means of storing a third conversion

constant or fourth conversion constant that corresponds to said pattern-conversion constant; a

signal-generation means of receiving said first signal and converting the pattern-conversion

constant contained in that signal to said third conversion constant or said fourth conversion

constant to generate a first signal; and a transmission means of sending said first signal to said

apparatus on the receiving side (Figures 2 [block 240], 3 [block 340], 4 [block 440], column 5,

lines 13-30, column 8, line 6-14, column 9, lines 28-44);

said apparatus on the receiving side comprises: a reading means of receiving said first

signal and said second signal and reading said first substitute value, said first conversion constant

and said third conversion constant or said fourth conversion constant from said first signal, and

reading second substitute value, said second conversion constant and said third conversion

constant or said fourth conversion constant from said second signal; a decoding means of using

the conversion constants that were used for encrypting said first substitute value and said second

substitute value to decode said first substitute value and said second substitute value to first

decoded data and second decoded data, respectively; and an authentication means of performing

authentication of said first signal and said second signal from said first decoded data and said

second decoded data (Figures 2 [block 220], 3 [block 320], 4 [block 420], 5B, 6B, 7B, column 6,

line 17 to column 3, line 20, column 8, line 31 to column 9, line 4, column 10, line 1-47).

25.   Andivahis does not teach a second relay apparatus comprising a memory means of storing a third conversion constant or fourth conversion constant that corresponds to said pattern-conversion constant, a signal-generation means of receiving said second signal and converting said pattern-conversion constant contained in that signal to said third conversion constant or said fourth conversion constant to generate a second signal and a transmission means of sending said second signal to said apparatus on the receiving side.

26.   Nielson teaches a second relay apparatus comprising a memory means, a signal-generation means and a transmission means of sending said second signal to said apparatus on the receiving side (Figures 4 [block 405], 5 [blocks 505, 507], 6 [603, 605, 607], 9 [block 905], 10, 1005).

27.   It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second relay apparatus comprising a memory means of storing a third conversion constant or fourth conversion constant that corresponds to said pattern-conversion constant, a signal-generation means of receiving said second signal and converting said pattern-conversion constant contained in that signal to said third conversion constant or said fourth conversion constant to generate a second signal and a transmission means of sending said second signal to said apparatus on the receiving side, since Nielson states at paragraphs 0015 that it allows a sender to specify a path thereby ensuring the security of the sent message.

Conclusion

28.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

29.   The following patents are cited to further show the state of the art with respect to

encrypted transmissions via a third party, such as:

        United States Patent Application Publication No. 2003/0014623 A1 to Freed et al., which

is cited to show a SSL session through an intermediary.

        United States Patent Application Publication No. 2003/0014650 A1 to Freed et al., which

is cited to show a SSL session through an intermediary.

        United States Patent No. 7,228,412 B2 to Freed et al., which is cited to show a SSL

session through an intermediary.

        United States Patent No. 5,784,566 to Viavant et al., which is cited to show negotiating

security services in a two or three party system.

        United States Patent No. 7,181,017 B1 to Nagel et al., which is cited to show securing

three-party communications.

        United States Patent No. 6,584,562 B1 to Fiori, which is cited to show a server securing a

link between two communicating parties.

        United States Patent Application Publication No. 2003/0016821 A1 to Hammersmith,

which is cited to show one-time pad encryption between two parties with the help of a third

party.

        United States Patent Application Publication No. 2003/0147536 A1 to Andivahis et al.,

which is cited to show the published application of the patent used to reject the claims of the

instant application.

30.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christian LaForgia whose telephone number is (571)272-3792.

The examiner can normally be reached on Monday thru Thursday 7-5.

31.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

32.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christian LaForgia/
Primary Examiner, Art Unit 2439

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